



*Transport & health in our cities*  
Thursday 19<sup>th</sup> April 2018, Wellington

# Transport, wellbeing and community: learning from recovering Christchurch

**Simon Kingham**

Chief Science Advisor, Ministry of Transport, Wellington, NZ

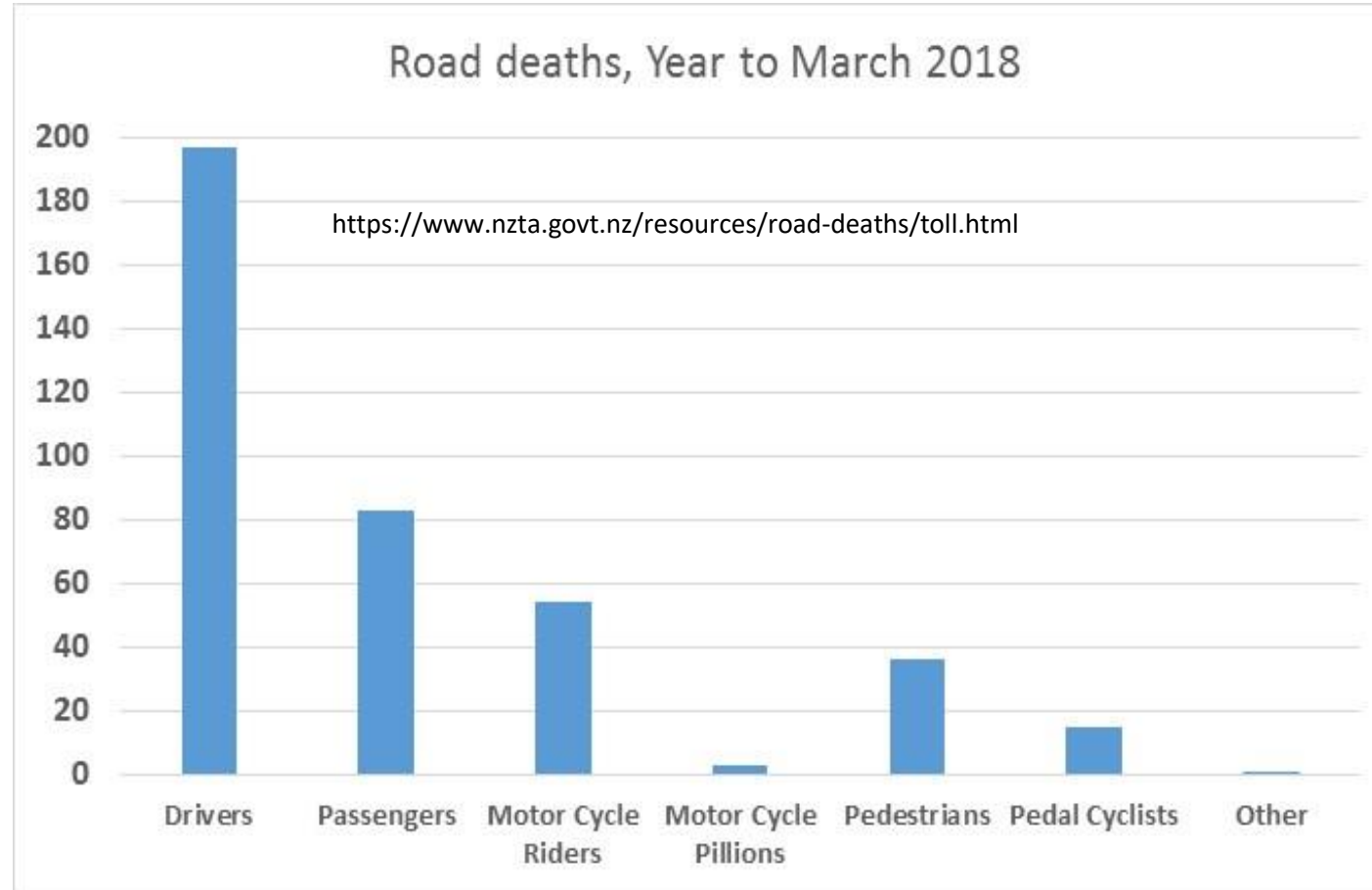
Professor, University of Canterbury - Te Whare Wananga O Waitaha, Christchurch

# Transport, health and wellbeing

- Access
  - Employment
  - Recreation
  - Social networks
  - Health

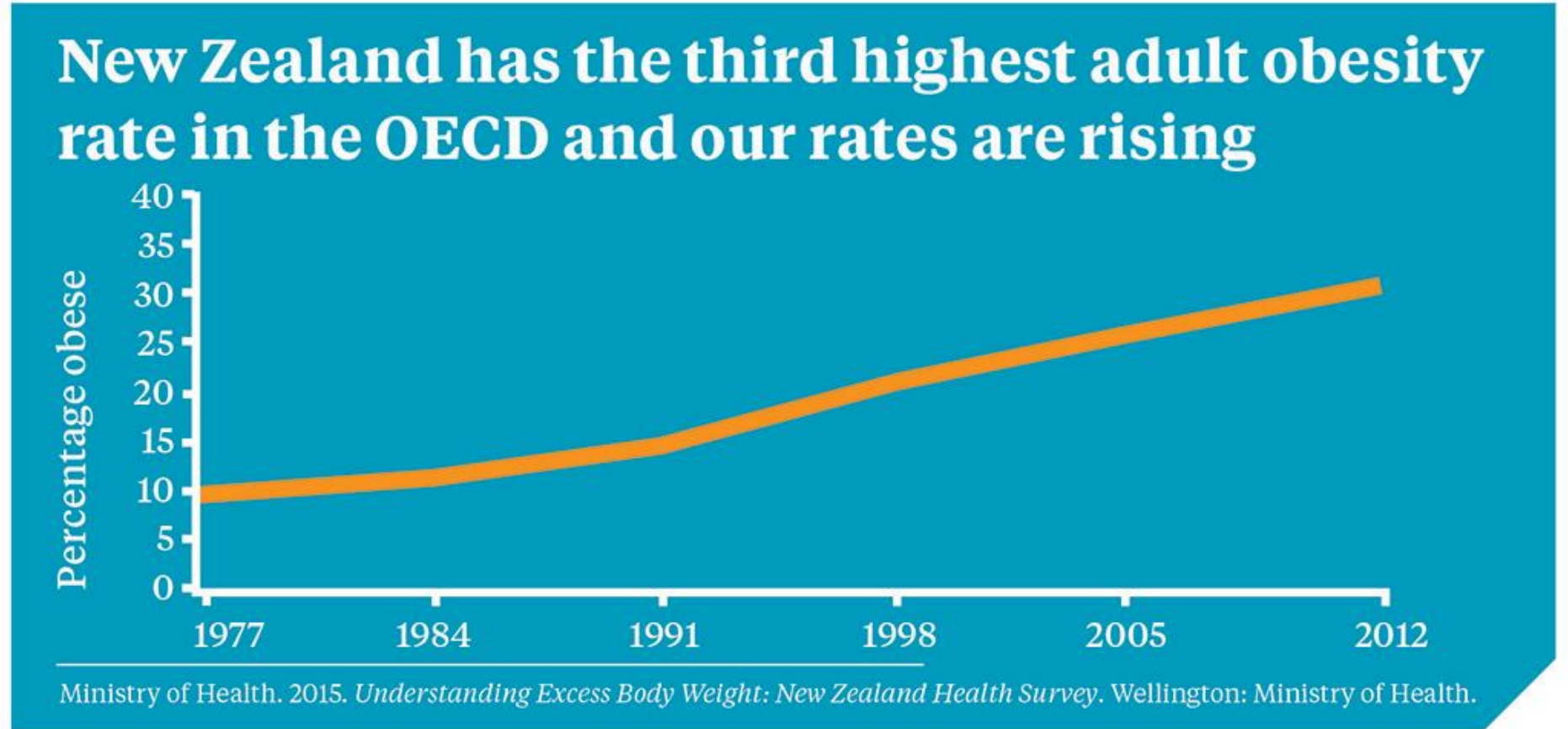
# Transport, health and wellbeing

- Access
- Accidents



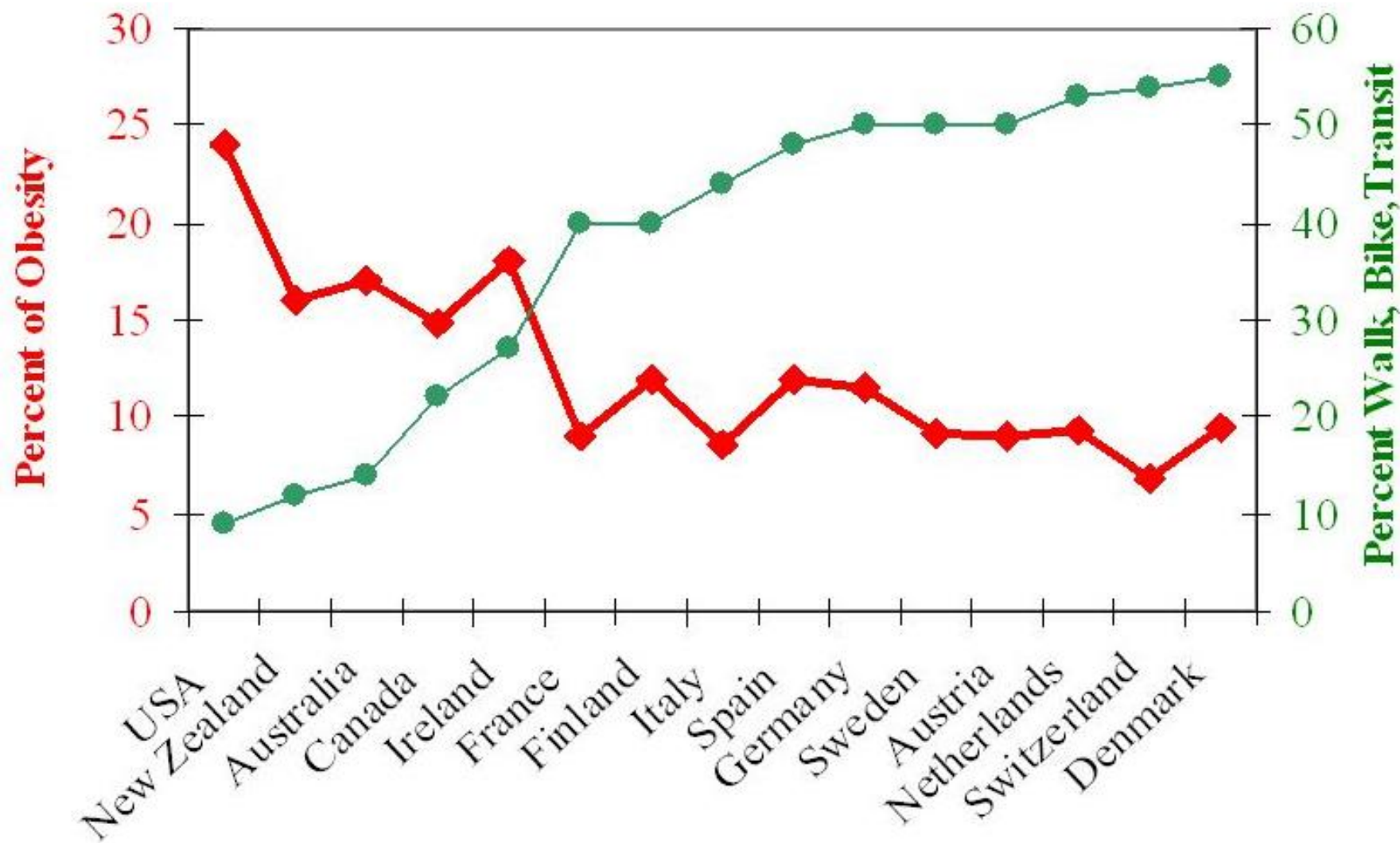
# Transport, health and wellbeing

- Access
- Accidents
- Activity



# Active commuters 'have lower BMI'

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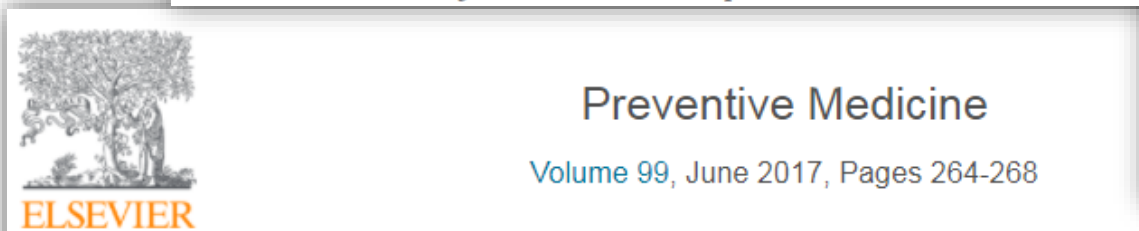


◆ Obesity ● Walk, Bike, Transit



# Public transport – active?

*“a transit trip involves 1250 steps, required to access and egress the network as well as to transfer between routes or modes .... [a round trip (2500 steps)] accounts for 25% of the recommended volume of physical activity per day” Canada*



**Walkability, transit, and body mass index: A panel approach**

Michael J. Smart



# Transport, health and wellbeing

- Access
- Accidents
- Activity
- Transport pollution



International Journal of  
*Environmental Research  
and Public Health*



*Article*

## **Rapid Assessment of Environmental Health Impacts for Policy Support: The Example of Road Transport in New Zealand**

David Briggs <sup>1,\*</sup>, Kylie Mason <sup>2,†</sup> and Barry Borman <sup>2,†</sup>

### **TRANSPORT FOR HEALTH**

**THE GLOBAL BURDEN OF DISEASE  
FROM MOTORIZED ROAD TRANSPORT**

FOREWORD BY  
WORLD BANK GROUP PRESIDENT JIM YONG KIM

GLOBAL ROAD SAFETY FACILITY  
THE WORLD BANK GROUP

INSTITUTE FOR HEALTH METRICS AND EVALUATION  
UNIVERSITY OF WASHINGTON



**Ministry of Transport**  
TE MANATŪ WAKA



# Transport, health and wellbeing

- Access
- Accidents
- Activity
- Transport pollution
- Transport environment
  - e.g. mental health, community

**An exploration of the effects of  
roads and traffic on mental health  
in Auckland, New Zealand**

A thesis submitted in fulfilment of the requirement for the Degree of

**Masters of Science in Geography**

By Kirsten Curry

Department of Geography, University of Canterbury

August 2016

# Community

- Compared to driving, wellbeing was higher when using active travel or public transport.
- Use of active travel reduced the likelihood of two specific GHQ12 psychological symptoms.
- Switching from car driving to active travel improved wellbeing.
- Wellbeing increased with travel time for walkers, but decreased for drivers.



Preventive Medicine

Volume 69, December 2014, Pages 296–303



Does active commuting improve psychological wellbeing?  
Longitudinal evidence from eighteen waves of the British  
Household Panel Survey

Adam Martin<sup>a, b</sup>,  , Yevgeniy Goryakin<sup>a, b</sup>,  , Marc Suhrcke<sup>a, b, c</sup>,  

# Wellbeing Lower Among Workers With Long Commutes

by Steve Crabtree

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Back pain, fatigue, worry all increase with time spent commuting

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WASHINGTON, D.C. -- American workers with lengthy commutes are more likely to report a range of adverse physical and emotional conditions, leading to lower overall scores on the Gallup-Healthways Well-Being Index.

# Drivers Have the Most Stressful Commutes

Transit riders and walkers, who avoid the “unexpected delays” of traffic, stack up better in a new survey.

ERIC JAFFE |  @e\_jaffe | Sep 21, 2015 |  4 Comments

Transportation Research Part F 34 (2015) 141–151



ELSEVIER

Contents lists available at [ScienceDirect](http://www.sciencedirect.com)

## Transportation Research Part F

journal homepage: [www.elsevier.com/locate/trf](http://www.elsevier.com/locate/trf)

Am stressed, must travel: The relationship between mode choice and commuting stress

Alexander Legrain<sup>a</sup>, Naveen Eluru<sup>b</sup>, Ahmed M. El-Geneidy<sup>a,\*</sup>

# Christchurch research

What can we learn about community from post-earthquake Christchurch

- Including travel, transport, streetscape, urban design

Interviews with residents, leaders, stakeholders

- Density, Socio-economic status, accessibility, environment, urban form



**Karen Banwell**

# What we found: home & place

- **Geographically defined** - hills, river, parks, social boundaries
- **Housing stability** – often renting vs owning, longevity of tenure
- **Pre-existing community development initiatives/programmes** – govt or community, formal or informal



# What we found: streets and travel

- **Intimate streets** – cul-de-sacs, laneways, back sections
  - *“Our street is wide so we don’t know each other”*
  - *“People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around”*

Friday, 13 November 2015

## Back lanes as recreational areas

### Popular Now in Metro

KTM begins installing new ticket machines

Giving it my best

High price to pay for security

Dr Fatimah: Non-life threatening cases should avoid A&E units at hospitals

Han emperors' favourite sweet

THE IPOH City Council is mulling the idea of converting back lanes into recreational areas, similar to what is being done in many other countries.

Mayor Datuk Zamri Man said the council is studying the suitable locations at Ipoh's Old and New Town areas.

He said either the back lanes could be converted to recreational areas or made into parking lots.

"Since we have limited places to construct recreational areas within the city, we need to enhance and upgrade the existing ones.



## back lane project - OUR LOST SPACE

WINNER: GRAND PRIZE WINNER



Login

## Gardening? It's right up our alley! Community transforms Victorian passageway behind homes into oasis of greenery

- Once-dingy lane in Middlesbrough now haven of hanging baskets, trellises and trees with apples and pears
- Mavis Arnold has helped turn lane into a wonderland, while neighbouring alleys are still scruffy and rundown
- Alley was well-kept in 1960s but as the decades dragged on residents began to dump their rubbish on cobbles

## NATIONAL POST

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NEWS CANADA POLITICS

## CANADA

TRENDING Brexit | Blue Jays | Trump | FP500 | Lotto Max

## Forgotten 'country lane' experiment could be answer to Vancouver's desire for more green space

BRIAN HUTCHINSON | July 2, 2013 5:10 PM ET  
More from Brian Hutchinson | @hutchwriter

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www.chattrust.co.uk/index.php?option=com\_content&view=article&id=50&Itemid=49

## CHAT TRUST

Churches Acting Together in Arthur's Hill



Services / Reclaim the Lanes

## Reclaim the Lanes

For anyone familiar with the West End of Newcastle the back lanes of the terraces are known to be an ongoing issue as regards rubbish. Working with our partners - Greater Newcastle Community Partnership, Jespersen, Community Housing

www.bungoblog.com

quick access, place your bookmarks here on the bookmarks bar. Import



Living Here About Strathbungo Strathbungo Society

## Bungo in the Back Lanes, 2016 – THANK YOU!

June 21st, 2016 Kevin Kane

A BIG THANK YOU from The Strathbungo Society to everyone who contributed to making Bungo in the Back Lanes, 2016 such a great



No comments

of Transport  
WAKA

# What we found: streets and travel

- **Intimate streets** – cul-de-sacs, laneways, back sections
  - *“Our street is wide so we don’t know each other”*
  - *“People get into their cars and go to work and then come home press the little button for their garage door and they go inside to their private spaces never once turning around”*
- **Walkable** – safe, attractive and connected
  - *“Because walking somewhere you see people and that is really important to us to see people and have that eye contact and being human together”*
  - *“It can take a long time to get to the shops unlike the places with fences and garages”*
- **Green** – presence of trees





**Trees**  
e.g. Christchurch



# What we found: proximity and urban design

- **Local** - community hubs, library, pools, parks, recreation areas
  - *“If you have to get in your car it’s not local”*
- **Bumping places** - schools, shops, street furniture
  - *“The school was the only bumping place for Phillipstown and then the Ministry closed it, the constancy in the children’s lives. The Ministry did not see the school as a community hub or the importance for the community”*
- **Gathering places** - churches, pubs, cafes
  - *“It’s hard for people to engage with each other when you don’t have a meeting place to come together”*



# Bumping spaces

e.g. Vancouver (SK)





## Bumping spaces

e.g. Christchurch (SK)



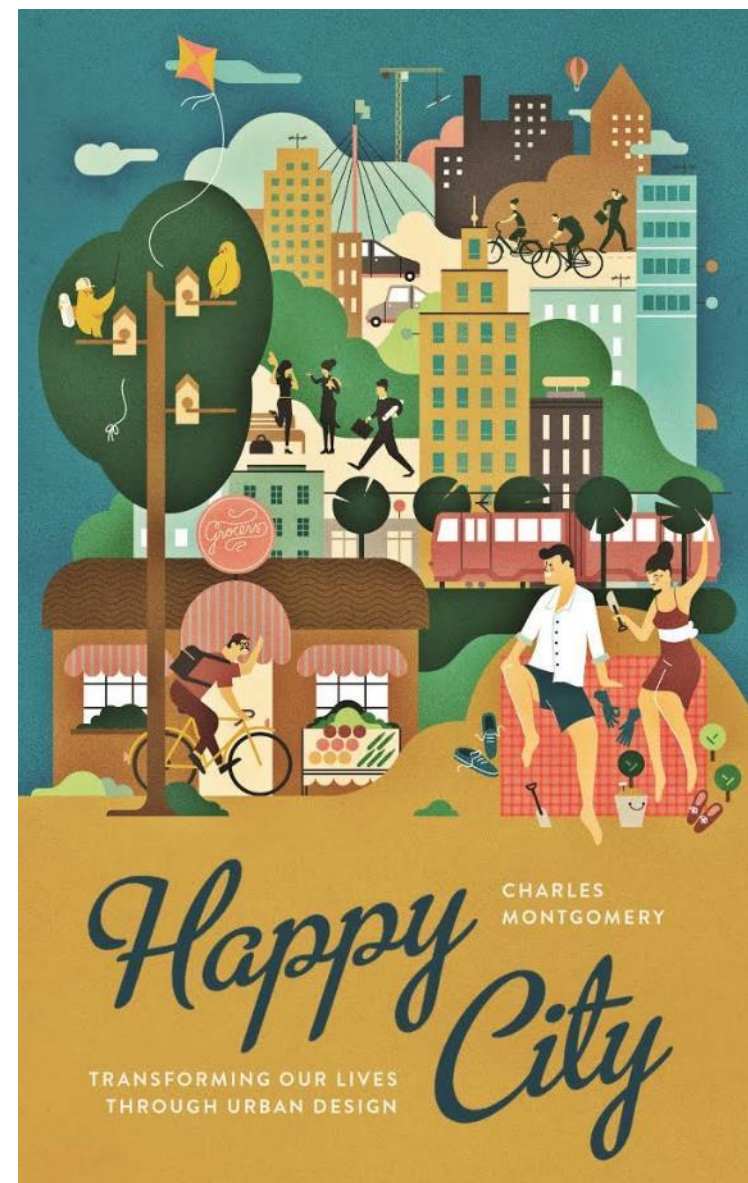
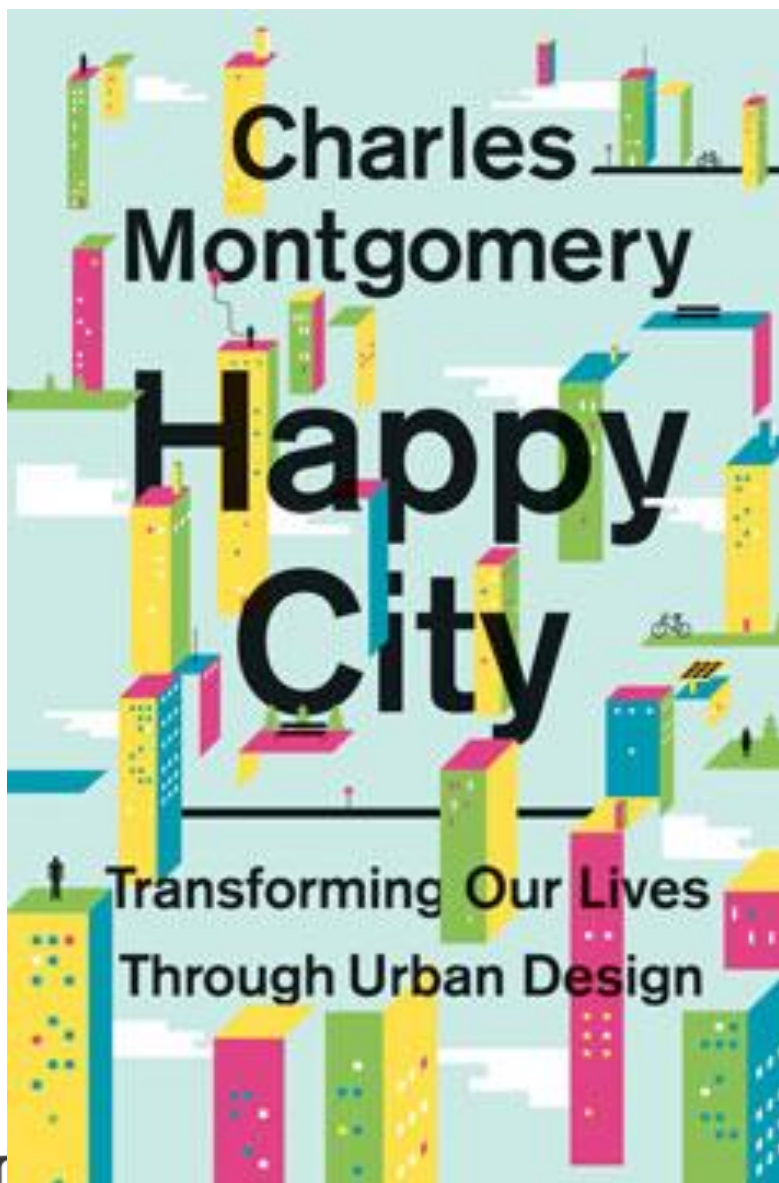


## Bumping spaces

e.g. Christchurch (Alan Jamieson)



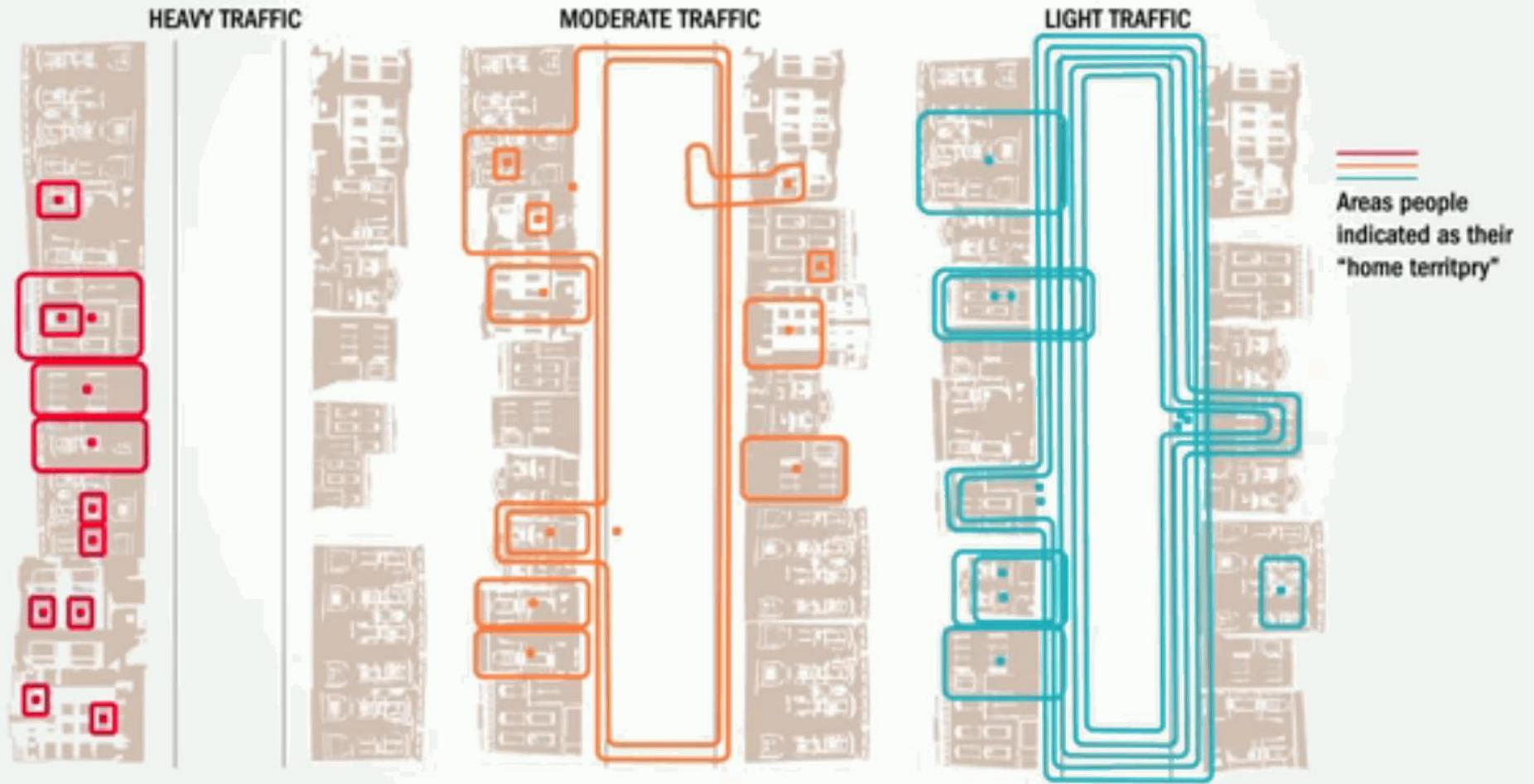






# Traffic and community

## Home Territory on Three Streets



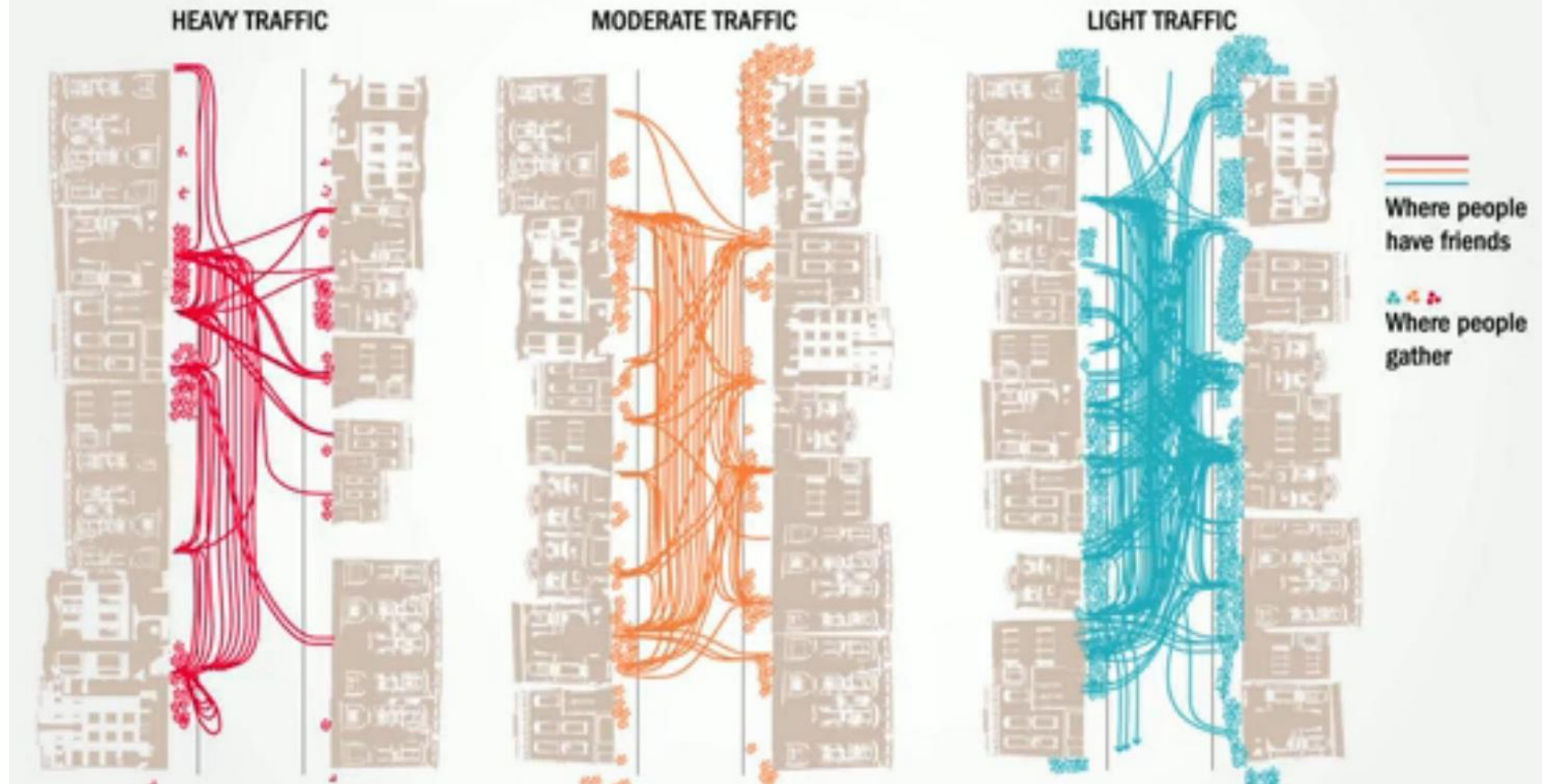
Traffic levels: 16,000, 8,000 and 2,000 vehs per day

Figure 2: This illustration shows how a resident's sense of their home territories shrinks as traffic grows heavier and faster.

Source: Figure 4, page 23, *Livable Streets*, Donald Appleyard, University of California Press, 1981.



# Social Interactions on Three Streets - Neighboring and Visiting



Traffic levels: 16,000, 8,000 and 2,000 vehs per day

Figure 1: This image shows how community ties can actually be knit together by a street that is livable and inviting — or torn apart when auto traffic noise, pollution, and threats dominate the street environment.

Source: Figure 3, page 21, *Livable Streets*, Donald Appleyard, University of California Press, 1981.



# Christchurch research

## Residents surveys

- Streetscape, traffic volume



Heavy  
8,000-14,000 vpd



Moderate  
1,400-2,500 vpd



Light  
Under 500 vpd

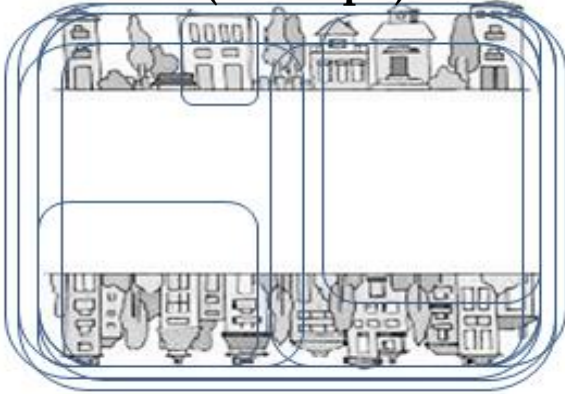


Jesse Wiki



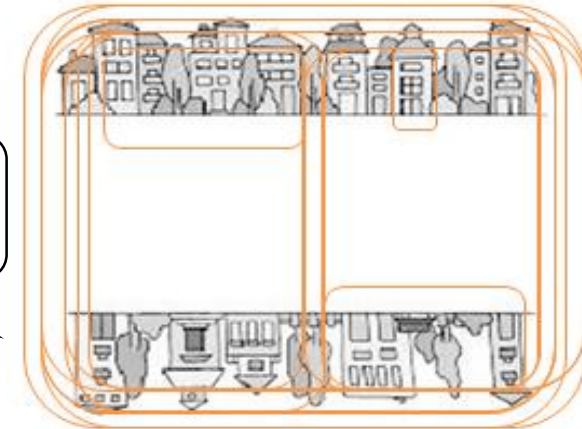
# Local Home Area

**LIGHT (<500 vpd)**



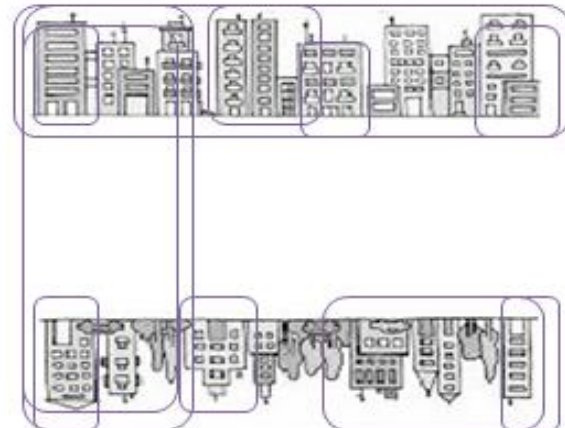
"We have adopted this street as our home"  
"Quiet, clean and friendly"

**MODERATE (1400-2,500 vpd)**



"Local parks host most of the leisure activities and games"  
"I like the general ambience"

**HEAVY (8,400-14,000 vpd)**



"You don't see many people"  
"I would prefer not to live on such a busy and public street with noise, car fumes and dust"

# Neighbourhood Connections

## LIGHT (< 500 vpd)



5.1 average connections

"We have great neighbours and live in a safe street"  
"I enjoy talking with my neighbours"

## MODERATE (1400-2500 vpd)



5.9 average connections

"Most people get out and about and talk on the street"  
"Family-orientated and friendly"

## HEAVY (8,400-14,000 vpd)



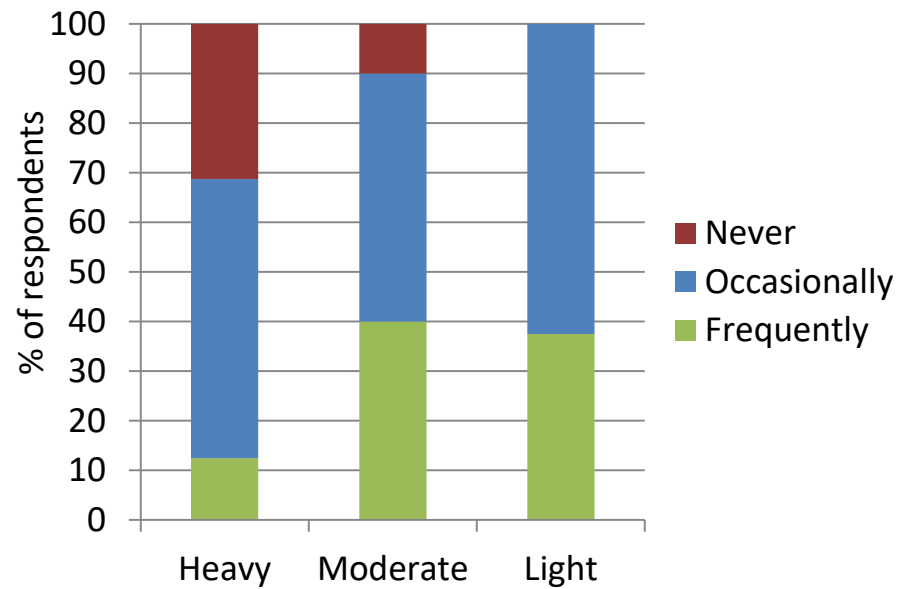
2.1 average connections

"My street is a car thoroughfare"  
"Lived here over 35 years, a decline in people talking to neighbours and children playing"

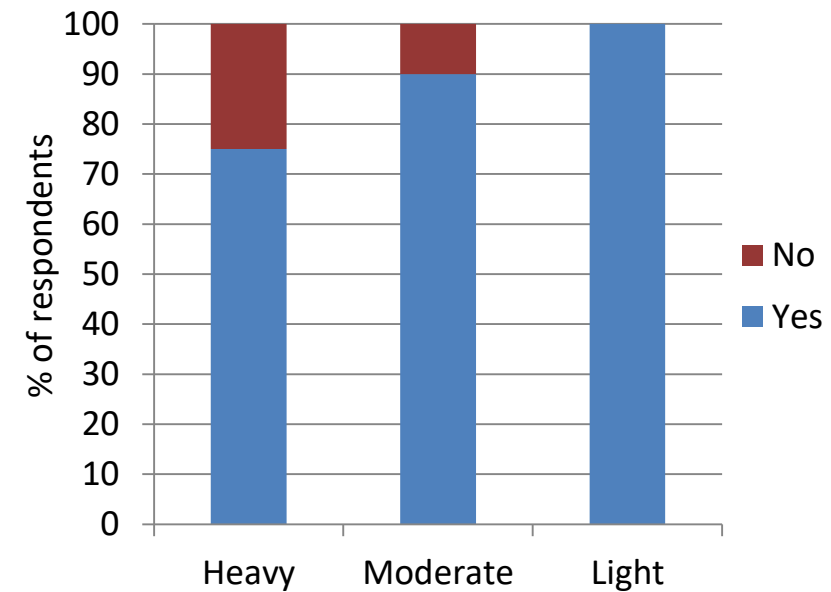


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# Community and belonging



**Community  
Interaction**



**Sense of  
Belonging**

# *Transport* features of healthy communities

- Walkable
- Low/slow traffic
- Good public transport
- Close proximity to facilities e.g. schools, shops, job
- Green – trees
- *Bumping* and *gathering* spaces/places

# Time and speed

Saving of travel time has been central to transport decision making, but..

*The idea that the main benefit of improvements to transport infrastructure is the saving of travel time has been central to transport economic analysis. There is, however, **little empirical evidence to support this** proposition. Indeed, in the long run average travel time is conserved, implying that **travellers take the benefit of improvements in the form of additional access to more distant destinations** made possible by higher speeds.*

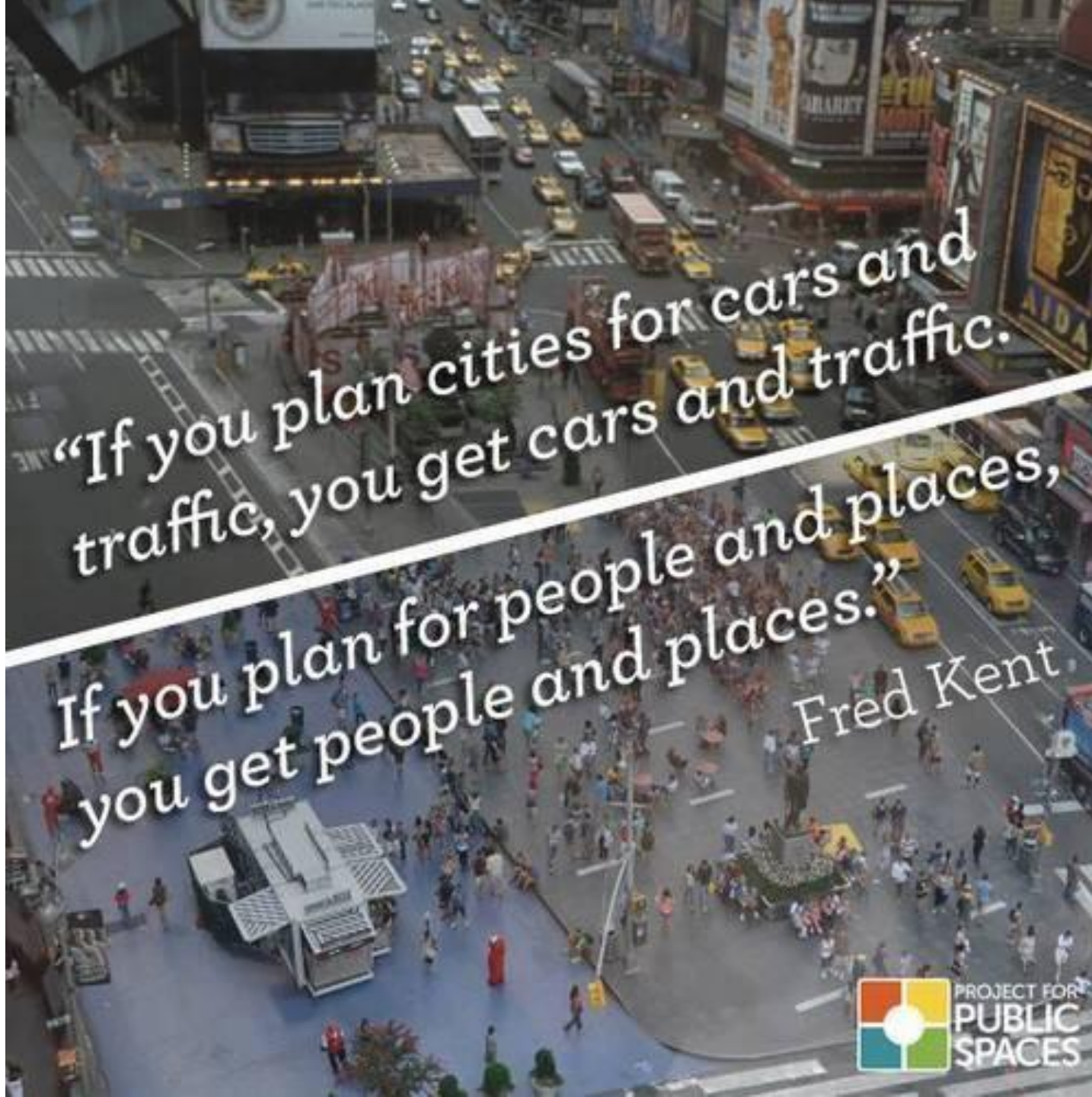
Metz D, 2008, The myth of travel time saving. Transport Reviews, 28, 3, 321–336.

[www.greaterauckland.org.nz/wp-content/uploads/2009/10/Metz-2008.pdf](http://www.greaterauckland.org.nz/wp-content/uploads/2009/10/Metz-2008.pdf)

# Final thoughts

- Fast is not always best
  - *“It can take a long time to get to the shops unlike the places with fences and garages”*
- Door to door is not always be best
  - First and last 100 metres
  - Exercise and interaction are good
- Slow *residential* streets
  - Streets as recreation spaces - walk, bike (slow) etc.
  - Only essential vehicles (disabled, deliveries, emergency)





“If you plan cities for cars and traffic, you get cars and traffic.”

If you plan for people and places, you get people and places.”

Fred Kent

# Thanks

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 @SimonKingham

## Acknowledgements

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- Research participants
- MBIE
- Resilient Urban Futures (RUF) project
- Prof Philippa Howden-Chapman
- Profs Karen Witten (Massey) and Robin Kearns (Auckland)



# Overall impacts

*On average, the estimated health benefits of cycling were substantially larger than the risks relative to car driving for individuals shifting their mode of transport*

*- de Hartog et al, 2010, Do the health benefits of cycling outweigh the risks? EHP 118, 8, 1109-1116.*

*The findings, which demonstrate a consistent dose–response for improved function and health, provide strong support for the promotion of cycling for public health*

*- Oja et al, 2011, Health benefits of cycling: a systematic review. Sc Jnl of Med & Sci in Sports, 21: 496–509*

*The health benefits of moving from cars to bikes heavily outweigh the costs of injury from road crashes*

*- Lindsay G, Macmillan A & Woodward A, 2011, Moving urban trips from cars to bicycles: impact on health and emissions. Australian and New Zealand Journal of Public Health, 35: 54–60.*